

REMARKS

Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and the following remarks. In the present amendment, claims 1, 5, and 6 have been amended, claims 2-4 and 7-9 have been canceled, and claims 10-16 have been withdrawn from consideration. Claims 1, 5, and 6 are therefore pending in this application. No new matter has been added to the application. Applicant believes that no additional fees for claims are due by way of this amendment, however, the Director is authorized to charge any additional fees or credit any overpayment, to our Deposit Account No. 19-1090.

35 U.S.C. §112 Rejections

Claims 1, 5, and 6 stand rejected under Section 112. The Examiner rejects claim 1, suggesting that the claim is unclear and is incomplete for omitting essential steps.

Applicant disagrees with the Examiner's contention that claim 1 is indefinite for omitting essential steps. The Examiner suggests that the step of "providing a cylindrical pressure chamber" must be recited prior to the step of "inserting the wear liner into the pressure chamber." Applicant submits that this step is not essential. A person may practice the invention without first "providing a pressure chamber." Applicant therefore submits that the claims, as amended, meet the requirements of Section 112.

Remaining claims 2-4 and 7-9 were also rejected under Section 112; however, this rejection is now moot given that these claims have been cancelled.

35 U.S.C. §102(b) Rejection of Claims 1-4 in View of Prevender

The Examiner cites Prevender (U.S. Patent No. 4,198,740) as anticipating Applicant's independent method claim 1.

Prevender teaches to expand a liner after placing it in a shell by using the unique property of water, which expands when frozen. More particularly, Prevender teaches the steps of filling the liner with water and cooling the water to at least its freezing point. As the water in the liner freezes, the liquid water is converted into its solid form, ice. Because the ice takes up a larger volume of space, the ice generates an increased, outward pressure on the liner, which

causes the liner to deform into contact with the shell (column 2, lines 34-45). Prevender further teaches that the water is cooled by routing a refrigerant through a cooling coil located within the liner (column 2, lines 38-41; and Figure 2 – showing ice formations on the cooling coil). It is one of the objects of Prevender to provide a method of bonding or hydroforming without employing a fluid pump. Thus, Prevender teaches to generate pressure in the liner via a cooling coil, and the formation of ice.

In contrast, Applicant's claim 1 recites subjecting a wear liner to an increased pressure by providing fluid communication between an external pressure source and a pressure chamber to expand the wear liner. The method taught by applicant and recited in claim 1 therefore differs significantly from the internally located cooling coil and formation of ice taught in Prevender. Prevender therefore does not anticipate Applicant's amended claim 1. Applicant submits that claims 1, 5, and 6 are allowable.

In discussing failed alternative methods, Prevender describes an inoperable and non-enabled bladder expansion. The disclosed method places a bladder inside the liner and then pressurizes the bladder with a gas to 200 psi (column 3, lines 24-27). The expanded bladder, in turn, expands and forces the liner against the interior surface of a shell. The outer surface of the liner is coated with an epoxy to help the liner to bond with the shell. Prevender acknowledges that the disclosed method was inoperable because the bond formed between the liner and the shell failed when subjected to thermal cycling.

A prior art disclosure can only be used to declare an applicant's invention 'not novel' or 'anticipated' if the reference contains an enabling disclosure. *In re Hoeksema*, 399 F.2d 269, 158 USPQ 596 (CCPA 1968). When a prior art reference merely discloses the structure of the invention, evidence showing that attempts to make the invention were unsuccessful before the date of the invention will be adequate to show inoperability. *In re Wiggins*, 488 F.2d 538, 179 USPQ 421 (CCPA 1971). A prior art reference is presumed operable until applicant provides facts rebutting the presumption of operability. *In re Sasse*, 629 F.2d 675, 207 USPQ 107 (CCPA 1980).

Thus, Applicant submits that, per *Wiggins*, the bladder expansion method disclosed in Prevender is an inoperable and non-enabling disclosure that cannot be used as the basis of a rejection under Section 102.

Alternatively if the bladder expansion method were considered to be operable, the Applicant submits that this method teaches that expanding the liner is done by pressurizing an intermediate bladder within the liner and not permitting the pressurizing fluid to be in direct contact with the liner. In addition, Prevender teaches that epoxy is necessary to achieve at least a temporary bond between the liner and the shell.

In contrast to Prevender, Applicant does not utilize a bladder and does not rely on epoxy to form a bond between the wear liner and the pressure chamber. The limitation in Applicant's claim 1 of "the wear liner being directly exposed to the fluid and subjected to the increased pressure" is not disclosed or even suggested by Prevender. Accordingly, the bladder expansion method discussed in Prevender does not anticipate Applicant's claim 1, as amended.

35 U.S.C. §102(b) Rejection of Claims 2-4 and 7-9 in View of Prevender

Applicant has canceled claims 2-4 and 7-9; therefore the Section 102(b) rejection of these claims is moot.

35 U.S.C. §102(b) Rejection of Claims 7-8 in View of Gårdin et al.

Applicant has canceled claims 7-8, therefore the Section 102(b) rejection of these claims is moot.

35 U.S.C. § 103 Rejection of Claims 1-4

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gårdin et al. in view of Prevender. The Examiner states that it would have been obvious to one having ordinary skill in the art at the time of the invention to provide Gårdin et al. with a liner placing method step, as taught by Prevender, in order to improve the bonding of the liner to the pressure chamber.

Three criteria must be met to establish a *prima facie* case of obviousness: (1) there must be a motivation to combine references; (2) there must be a reasonable expectation of success; and (3) the combined references must teach all the claim limitations. MPEP § 2143. Regarding the first criteria, there are three possible sources for a motivation to combine references, which are (1) the nature of the problem to be solved; (2) the teachings of the prior art; and (3) the knowledge of persons of ordinary skill in the art. MPEP § 2143.01 *citing In re Rouffett*, 149 F.3d 1350, 1357, 47 USPQ.2d 1453, 1457-58 (Fed. Cir. 1998). Without some objective evidence regarding a motivation to combine, the level of skill in the art cannot be relied on to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ.2d 1161 (Fed. Cir. 1999).

Applicant submits that a *prima facie* case of obviousness has not been established because there is no motivation to combine the cited references. In addition, there would be no expectation of success because the cited references employ incompatible methods of installing a liner in a pressure chamber.

As an initial matter, the cited art references do not obviate Applicant's claim 1 because the method taught by Gärdin et al. for installing a liner in a pressure chamber is incompatible with the method disclosed in Prevender. Gärdin et al. teaches to impart radial, compressive stresses by press-fitting the safety liner into the pressure chamber; whereas Prevender teaches to insert a liner sized to fit into the pressure chamber and then radially expands the liner with water/ice pressure. Applicant submits that it is not possible to size the liner as taught in Prevender and still achieve a press fit installation as taught in Gärdin et al. In addition, Applicant submits that if the liner is press fit into the pressure chamber as taught in Gärdin et al. then there is certainly no need to subsequently pressurize the liner in an attempt to expand the liner. Such an attempt would be futile because the liner cannot be expanded at that point because it would be constrained by the pressure chamber. Consequently, the methods of Prevender and Gärdin et al. cannot be combined to establish a *prima facie* case of obviousness.

In addition, the cited art references do not obviate Applicant's invention because the nature of the problem to be solved in each of the references is significantly different. The Examiner suggests that the problem to be solved is an improved method of bonding a liner to a

pressure chamber. Applicant agrees that the water/ice expansion method disclosed in Prevender provides one teaching to solve this problem, but disagrees that Gärdin et al. teaches toward this problem in any respect. The nature of the problem in Gärdin et al. is to radially compress (not expand) the liner during installation such that as the compressed liner undergoes pressurization during a normal operational cycle of the pressure chamber, the induced hoop stress in the liner will be counterbalanced by the radial, installation pre-stress in the liner. In essence, the problem in Gärdin et al. is to keep the applied hoop stress in the liner near at or below zero when the liner is being subjected to its normal operational pressure. Consequently, Applicant submits that the art relied on by the Examiner cannot be combined to support a *prima facie* case of obviousness because the nature of the problem to be solved, as taught in each reference, is significantly different.

Based on the foregoing reasons, Applicant submits that the Examiner has not established a *prima facie* case of obviousness. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection under Section 103 and permit the claims to advance to allowance.

Objections to the Drawings

The Examiner objected to the drawings stating that Figure 1 should be labeled as “prior art” and that no press was shown in the other figures. Accordingly, Figure 1 has been amended to be labeled as “prior art.” Enclosed with this amendment is a Replacement Drawing Sheet containing the amended Figure 1. In addition, Applicant has amended the specification to include the reference numeral “3” to identify the press. The press has always been illustrated in the drawings, but the identifying reference numeral was missing from the specification. No new matter has been added to the specification.

Conclusion

In light of the above amendments and remarks, Applicant respectfully submits that all pending claims are allowable. Applicant therefore respectfully requests that the Examiner reconsider this application and timely allow all pending claims. Examiner Nguyen is encouraged

Application No. 09/719,289
Reply to Office Action dated March 29, 2004

to contact the undersigned by telephone to discuss the above distinctions between the claims and the applied references, if desired, or informalities in the claims, if any.

Respectfully submitted,

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Enclosures:

Postcard

1 Replacement Sheet of Drawings (Figs. 1-4)

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